UNIT 4 BENCHMARK

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| **UNIT ASSESSMENT ALIGNMENT GUIDE** | | | | | |
| **Learning Goal #** | **Learning Goal** | **Aligned Item #’s** | **Points Correct** | **Points Possible** | **Grade**  (%) |
| **SPI 1.3** | **Apply properties to evaluate expressions, simplify expressions, and justify solutions to problems.** | **5, 8, 20** |  | **3** |  |
| **CFU 1.9** | **Identify and use properties of the real numbers (including commutative, associative, distributive, identity )** | **7, 18, 19** |  | **3** |  |
| **SPI 2.3** | **Describe and/or order a given set of real numbers including both rational and irrational numbers.** | **1, 3, 14** |  | **3** |  |
| **CFU 3.3** | **Justify correct results of algebraic procedures using extension of properties of real numbers to algebraic expressions** | **4, 12** |  | **2** |  |
| **SPI 1.2** | **Write an equation symbolically to express a contextual problem.** | **11, 27, 30** |  | **3** |  |
| **SPI 3.5** | **Write and/or solve linear equations, ~~inequalities, and co~~**  **~~mpound inequalities~~ including those containing absolute value.** | **2, 9, 13, 16, 23, 29** |  | **6** |  |
| **SPI 3.5** | **Write and/or solve ~~linear equations,~~ inequalities, and compound inequalities including those containing absolute value.** | **6, 10, 15, 21, 25, 28, 31, 32** |  | **8** |  |
| **SPI 4.1** | **Develop and apply strategies to estimate the area of any shape on a plane grid.** | **22, 26** |  | **2** |  |
| **SPI 3.8** | **Determine the equation of a line and/or graph a linear equation.** | **17, 24, 33** |  | **3** |  |
| ***TOTAL:*** | | |  | **33** |  |

1) Which shows the numbers ordered from least to greatest?

A) , , 2, 1.9

B) 1.9,, 2,

C) 1.9, 2, ,

D) , 1.9, 2,

2) *Solve:* x + 8 = 12 + 3x

A) x = -2

B) x = 2

C) x = -1.67

D) x = 0.67

3) Which is a rational number?

A)

B)

C) 14.125125

D) all of the above

4) What is the value of the expression when a = and c = -2

+ ac2

A) 12

B) -2

C) -3.6

D) 2.8

5) *Simplify:* 8x + 4(-7x – 6) – 4(1 + 5y) + 10y

A) -20x – 10y – 28

B) 36x – 10y – 28

C) -20x + 30y – 28

D) 36x + 30y – 28

6) What is the solution to this inequality?

5m – 10 < 3m – 13

A) m <

B) m <

C) m < -1

D) m < -1

7) Tony wants to make 500 flyers for his lawn mowing business. At Staples, it costs $0.35 for color copies and $0.15 extra for the glossy paper. He knows the equation 500($0.35 + $0.15) will give him the cost of his flyers. He knows this will give him the price because it is the same as calculating

500($0.35) + 500($0.15). What property did Tony use to justify that these two expressions represent the same cost after the discount?

A) Associative Property of Multiplication

B) Commutative Property of Addition

C) Distributive Property of Multiplication

D) Identity Property of Addition

8) Find the area of the shape below:

x – 4

-2 -2

x – 4

A) 2x + 8

B) 2x – 4

C) -2x + 4

D) none of the above

9) *Solve:*  1 = -7 + b

A) b = -6

B) b = 6

C) b = -8

D) b = 8

10) What is the solution to this inequality?

7.9*m* + 6.9 + 3.3 > -19.82

A) *m* > -3.8

B) *m* > 1.2

C) *m* < -3.8

D) *m* < 1.2

11) Willis wants to buy a new mp3 player. He goes to Best Buy and Walmart to

see which has a better deal. The mp3 player at Walmart is 2 dollars less than

the cost of the mp3 player at Best Buy. If *w* represents the cost of an mp3

player at Walmart, and *b* represents the cost of an mp3 player at Best Buy,

which is an equation for the cost of an mp3 player at Walmart?

A) w = 2b

B) w = b – 2

C) w = b + 2

D) w = 2 – b

12) What is the value of the expression when m = -9 and n = 2/3?

2

+

A) 120

B) -123

C) -135

D) 108

13) *Solve:*  -2.6(1 + 2.9a) = -23.712

A) a = -7.23

B) a = 1

C) a = 2.8

D) a = -1.35

14) Which is correctly ordered from greatest to least?

A) -25/5 , - 3π, - 4.8, -

B) -, -25/5, - 4.8, - 3π

C) - 3π, -25/5 , - 4.8, -

D) -, - 4.8, -25/5 , - 3π

15) Which statement represents the solution to this compound inequality?

-10k – 9 < -59 or 9k – 5 < 4

A) k < 1 or k > 5

B) k > 1 or k < 5

C) 1 < k < 5

D) none of the above

16) What are the solutions to the equation below?

|-2b + 5| = 21

A) {-7, 9}

B) {11, -9}

C) {-9, 7}

D) {-8, 13}

17) Which of the following equations represents the graph of the line below:



A) y = x – 3

B) y = x – 3

C) y = - x – 3

D) y = - x – 3

*Use the following information for questions 18 and 19:*

Given: 5(x + 8) + 0 = 12

Step 1: 5(x + 8) = 12

Step 2: 5x + 40 = 12

18) Which property justifies moving from the Given to Step 1:

A) Commutative Property

B) Associative Property

C) Distributive Property

D) Identity Property

19) Which property justifies moving from Step 1 to Step 2:

A) Commutative Property

B) Associative Property

C) Distributive Property

D) Identity Property

20) *Simplify:* -3m2 – 4mn + m+ 2m(n + 6)

A) -3m2 – 2mn + 13m

B) -3m2 + 6mn + 12m

C) -2m2 – 2mn + 13m

D) -2m2 + 6mn + 12m

21) Which statement represents the solution to this compound inequality?

22 < 2v + 10 < 24

A) 6 < v < 7

B) 6 > v > 7

C) v > 6 or v < 7

D) v < 6 or v > 7

22) Estimate the area of the figure below:

A) 10

B) 13

C) 18

D) 21

23) What are the solutions to the equation below?

|10 + 4k| – 1 = 17

A) {-5, 0}

B) {2, -7}

C) {-2, 7}

D) {5, 0}

24) Which of the following equations represents the graph of the line below:



A) y = 1.25x – 4

B) y = 1.25x + 4

C) y = 0.8x – 4

D) y = 0.8x + 4

25) Which could be a possible solution for the compound inequality below?

5 < 9 – 4n < 53

A) 5

B) -11

C) -1

D) -15

26) Estimate the area of the figure:

A) 10

B) 15

C) 20

D) 25

27) Wayne and Rob began a tutoring program at school. They have to pay the school $20 each day to use the library to tutor. How will Wayne (w) and Rob (r) figure their profits?

A) p = w + r + 20

B) p = 20 – w + r

C) p = w + r – 20

D) p =

28) Which could be a possible solution for the compound inequality below?

5 + 2r > 9 or 7r - 9 ≤ -72

A) -4

B) 1

C) -11

D) 0

29) *Solve:* 3(y – 3) = -2(y+ 17)

A) y = -8.6

B) y = 5

C) y = -12.5

D) y = -5

30) Shelby wants to rent a car for a weekend trip to Chicago. The rental car

company is running a special deal of a $20 flat fee plus $0.25 for each mile.

Shelby must also pay the insurance company $0.15 for each mile. Which

equation represents the total cost, *t* she must pay to rent the car and drive it *m*

miles?

A) t = 20 + (0.25 + 0.15)m

B) t = 0.25 + (20 + 0.15)m

C) t = 20 + 0.25 + 0.15m

D) t = 20m + 0.25 + 0.15

31) What is the solution for the following inequality?

|5x – 2| > 8

A) x < -2 or x >

B) x < - or x > 2

C) - < x <

D) - < x < 2

32) What is the solution for the following inequality?

|4y – 3| < 9

A) y > 3 or y < -1.5

B) y < -3 or y > 1.5

C) 1.5 < y < 3

D) -1.5 < y < 3

33) Which of the following represents the graph of



A) B)



C) D)

34) Josh earns works as a salesman at Best Buy. The equation y = 20x + 70

represents his total daily income, y, based on selling x electronics. What is

represented by the slope in this equation?

A) The total amount of electronics Josh sells each day

B) The total amount of money Josh earns each day

C) The amount of money Josh makes for each electronic he sells

D) The amount of money Josh would make if he sells no electronics

35) Kimberly is selling cookies to raise money for her senior trip. Her total earnings, y, are represented with the equation y = 4x + 10, based on selling x cookies. What does the slope of this equation represent?

A) The amount of money Kimberly sells each cookie for

B) The total amount of money Kimberly makes

C) The number of cookies Kimberly sells

D) The number of cookies Kimberly needs to sell

36-40) Choose a learning goal/standard from the front page and write how you would explain to a new student how to solve each problem. Don’t forget each step! (If you need more room, use a separate piece of paper.) Then create your own problem.

Standard: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Problem#: \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

My New Problem:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_